

2013 ANNUAL CAHSPR CONFERENCE
**SCOPING REVIEW: PATIENTS
USING TELEHEALTH FOR
SPINAL CORD INJURY (SCI)**

NAVINDRA BALDEO

PHD STUDENT, IHPME, UNIVERSITY OF TORONTO

CO-AUTHORS: DR. FARAH AHMAD

DR. FIONA WEBSTER



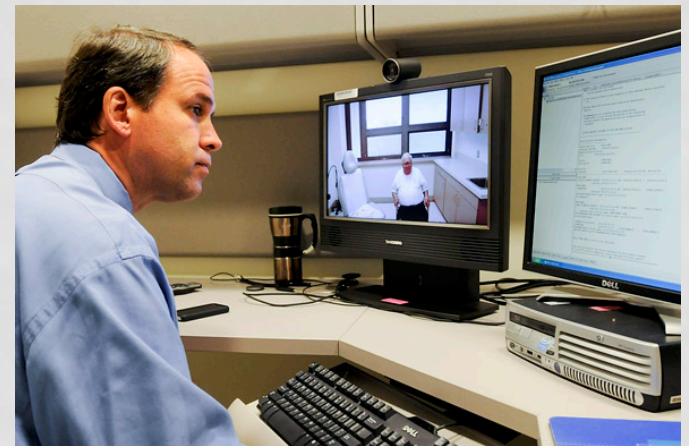
UNIVERSITY OF
TORONTO



CIHR IRSC

TELEHEALTH

- Delivery of health related services and information through telecommunication technologies
- May be used for preventive, diagnostic, educational and therapeutic interventions
- Multiple modalities are involved including text, audio, video, and/or a combination of
- Synonymous with telemedicine and telecare



SPINAL CORD INJURY

- Useful for patients with impaired mobility
- SCI patients have increased risk for developing secondary conditions
- As length of stay times decrease, telehealth may be able to augment patient care
- SCI patients are amongst the most complex and costly to manage in the health care system



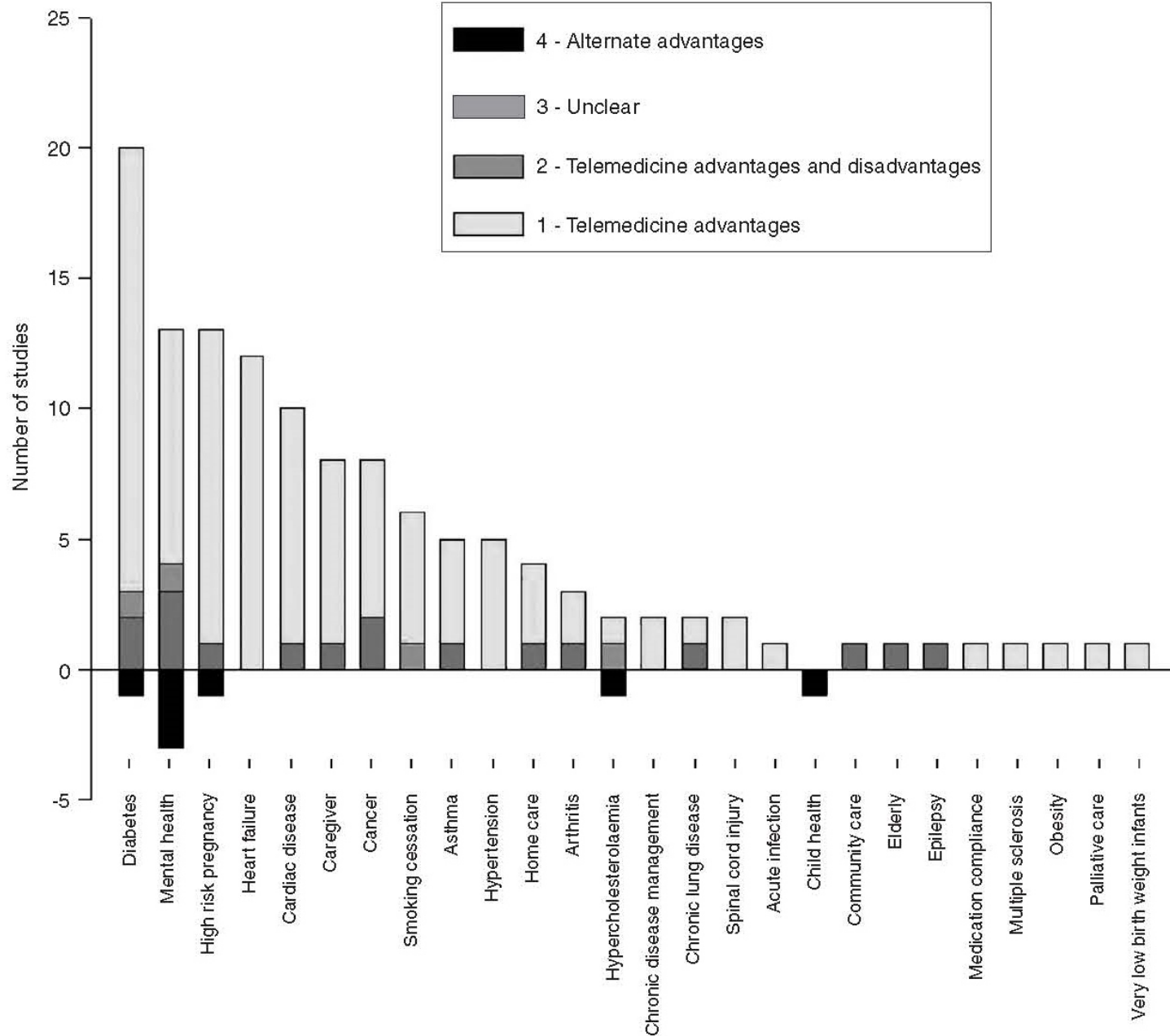
TECHNOGEOGRAPHY OF CARE

- Ways in which technologies participate in changing the landscape of care, redefining the meaning of these places and creating new sites where care takes place
- How technologies contribute to creating interdependencies and distributing responsibilities between people, places and technical devices, thus reconfiguring who cares



SOCIOTECHNICAL SYSTEMS

- Close integration of human and technical resources to get work done
- While new technologies are introduced to increase work productivity, they can actually disrupt the social system of the workplace
- Practitioners may have to redistribute their work and tasks among different human and non-human elements
- Telehealth stretches out and expands medical practice producing a new set of activities and identities



(Bensink et al, 2006)

SCOPING REVIEW

- A scoping review attempts to characterize the main concepts and breadth of perspectives that exist on a particular topic area, and to identify gaps within the literature and practice
- Search strategy:
 - Used MEDLINE, Web of Science and Pub Med
 - Yielded 14 studies for charting
 - Categorized studies by author, study design, population, objectives, interventions, findings, conclusions and limitations

SECONDARY CONDITIONS

- Secondary Conditions include pressure ulcers, skin wounds and sores, depression, mood disorders, hypertension, obesity, bladder infection, type 2 diabetes
- Telehealth can provide rehabilitation through physical therapy, dietary education, home safety evaluation, home exercise programs, psychosocial counselling and advice on properly using prosthesis and other assistive devices



TECHNICAL FOCUS

- Medical encounters may be facilitated by text, audio, video or a combination of
- Most data is transmitted through analogue plain old telephone lines, digital lines, internet-based connections and wireless connections
- Videoconferencing was found to yield more reliable and valid assessments than telephone
- Technologies have clinical value and augment patient care



GAPS IN LITERATURE

- Dearth on studies focusing on interpersonal and patient experiences
- Theoretical and critical bodies remain markedly underdeveloped
- Need to go beyond telehealth outcomes and focus on process including provider-patient encounter and sites of care
- Studies are largely descriptive
- Lack of qualitative studies that employ methods such as ethnography and interviews to capture the patient experience

FUTURE DIRECTIONS

- Scoping review highlights knowledge gaps for further investigation
- Conceptual models provide framework for investigating social and interpersonal factors which are lacking
- Helps to refocus search strategy to understand areas of the literature that have been less examined
- Additional Recommendations?



BIBLIOGRAPHY

- Bensink, M., et al. (2006). A systematic review of successes and failures in home telehealth: preliminary results. *Journal of Telemedicine and Telecare*, 12(Suppl 3): 8-16.
- Galea, M., et al. (2006). Telerehabilitation in Spinal Cord Injury Persons: A Novel Approach. *Telemedicine and e-Health*. 12(2): 160-162.
- Hill, M. L., et al. (2009). Validation of home telehealth for pressure ulcer assessment: a study in patients with spinal cord injury. *Journal of Telemedicine and Telecare*, 15(4): 196-202.
- Kowalczewski, J., et al. (2011). In-Home Tele-Rehabilitation Improves Tetraplegic Hand Function. *Neurorehabilitation Neural Repair*, 25(5): 412-422.
- Mathewson, C., et al. (2000). Initial Experiences With Telerehabilitation and Contingency Management Programs for the Prevention and Management of Pressure Ulceration in Patients With Spinal Cord Injuries. *Journal of Wound, Ostomy & Continence Nursing*, 27(5): 269-271
- Phillips, V. L., et al. (1998). A feasibility study of video-based home telecare for clients with spinal cord injuries. *Journal of Telemedicine and Telecare*, 4(4): 219-223.
- Phillips, V. L., et al. (1999). Using Telehealth Interventions to Prevent Pressure Ulcers in Newly Injured Spinal Cord Injury Patients Post-Discharge. *International Journal of Technology Assessment in Health Care*, 15(4): 749-766.
- Phillips, V. L., et al. (2001). Telehealth: reaching out to newly injured spinal cord patients. *Public Health Reports*. 116(Suppl 1): 94-102
- Rivera, P. A., et al. (2003). Project FOCUS: Using Videophones to Provide Problem-Solving Training to Family Caregivers of Persons with Spinal Cord Injuries. *Topics in Spinal Cord Injury Rehabilitation*, 9(1): 53-62.
- Soopramanien, A., (2005). Using telemedicine to provide post-discharge support for patients with spinal cord injuries. *Journal of Telemedicine and Telecare*, 11(Suppl. 1) S1:68-70
- Vesmarovich, Susan., (1999). Use of Telerehabilitation to Manage Pressure Ulcers in Persons with Spinal Cord Injuries. *Advances in Wound Care*, 12(5): 264-269
- Woo, C., et al. (2011). What's happening now! Telehealth management of spinal cord injury/disorders. *The Journal of Spinal Cord Medicine*, 34(3): 322-331
- Yozbatiran, N., et al. (2010). A tele-assessment system for monitoring treatment effects in subjects with spinal cord injury. *Journal of Telemedicine and Telecare Volume*, 16(3):152- 157